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# AGRICULTURAL HISTORY

January, 1934

English Views of Middle Western Agriculture,  
1850-1870

*Harry J. Carman*

Transportation and the Livestock Industry  
of the Middle West to 1860

*Charles T. Leavitt*



Published Quarterly  
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THE AGRICULTURAL HISTORY SOCIETY

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## CONTENTS

English Views of Middle Western Agriculture, 1850-1870

*Harry J. Carman* 3

Transportation and the Livestock Industry of the Middle West to 1860

*Charles T. Leavitt* 20

News Notes and Comments

34

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# AGRICULTURAL HISTORY

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## ENGLISH VIEWS OF MIDDLE WESTERN AGRICULTURE, 1850-1870<sup>1</sup>

HARRY J. CARMAN

"If the legislators of England could but be prevailed upon to remove all restrictions upon the importation of food for the half nourished population of the labouring classes of England, these prairies of the West might be made to yield, in a year or two at the utmost, food for millions; and as the growers of grain and the feeders of cattle, which might here be raised, would be as much in want of British manufactures of almost every kind, as our hungry artisans are of the necessary supply of food, the interchange of their respective productions would not fail to be mutually beneficial. If the British legislature would at once take this step it would do more than anything that could be devised . . . to relieve the distresses of the working classes in England, to revive the activity of commerce, give fair profit to capital, and even enrich the agriculturists themselves by their share in general welfare and prosperity."<sup>2</sup> Thus wrote the English traveler, J. S. Buckingham, in 1842, four years before the repeal of the Corn Laws. From this and similar statements made during the first half of the decade of the forties one might perhaps conclude that following the repeal, English markets were soon swamped with American farm products. Nothing could be farther from the truth. The repeal of the Corn Laws wrought no important immediate results. From 1851 to 1873 English agriculture prospered. Indeed, the demand for agricultural produce during these years was so great that the English farmer was unable to meet the demand, and agricultural commo-

<sup>1</sup> A paper presented at the joint session of the Agricultural History Society with the American Historical Association and other historical societies at Urbana, Illinois, on December 29, 1933.

<sup>2</sup> J. S. Buckingham, *The Eastern and Western States of America*, 3:242-243 (London, 1842).

dities had to be imported at great expense. Not until after the Franco-Prussian War did Britain begin to feel the effects of importations of farm produce from both America and Australia.<sup>3</sup>

Nevertheless, many Englishmen during these years manifested a lively interest in American farming, particularly in the agriculture of the expanding Middle West. Travelers' accounts, official documents, articles in newspapers and periodicals, records of the manufacturers of farm machinery, proceedings of livestock associations, memoranda of land and grain speculators, and the transactions of agricultural and other societies furnish abundant proof of this interest. In this paper an effort has been made to summarize some of the outstanding observations and opinions gleaned from these varied sources. The picture is by no means complete; yet sketchy and imperfect as it is, the fact that it is painted against an English background affords comparison.

Almost without exception, Englishmen were impressed by the vast area of the upper Mississippi Valley. Sir James Caird, a member of the House of Commons and a close student of British agriculture who traveled extensively in the Middle West, pictured it in 1858 as "the greatest tract of fertile land on the globe."<sup>4</sup> William Ferguson who visited America shortly before Caird and lectured on the West after his return home, described the region as "incredible" in extent.<sup>5</sup> Inevitably the British observer had recourse to comparison. Upon more than one occasion, for example, officials interested in the possible competition of British and American farm products pointed out that the valley of the

<sup>3</sup> *Quarterly Review*, 193:3-20 (January, 1901); Parliament Papers, 1882, Royal Commission on Agriculture, *Reports of Commission and Reports of Assistant Commissioners*. See also *Minutes of Evidence*, v. 1; L. C. A. Knowles, *The Industrial and Commercial Revolutions in Great Britain during the Nineteenth Century*, 370 (London [etc.] 1921); Ernle (R. E. Prothero), *English Farming, Past and Present*, 359-373 (London [etc.] 1927). For almost a quarter century after 1850 prices for English-grown agricultural produce were unusually high. The majority of English tenant farmers made money and lived very comfortably. Some lived in high style, a few even affording liveried coachmen. Cf. Henry C. Taylor, *The Decline of Landowning Farmers in England*, 52 ff. (Madison, 1904).

<sup>4</sup> James Caird, *Prairie Farming in America*, 37 (New York, 1859).

<sup>5</sup> William Ferguson, *America by River and Rail*, 375 (London, 1856).

Mississippi was fourteen times the size of Great Britain.<sup>6</sup> The Reverend James Shaw, who spent twelve years in America, repeatedly called attention to the fact that Illinois, the State in which he was especially interested, was larger than England and nearly twice the size of Ireland.<sup>7</sup> Authors of emigrant guide-books, dictionaries and gazetteers also resorted to the comparative method.<sup>8</sup>

Even more impressive than sweeping expanse of territory was the character of the soil. In practically every source examined, the surface and fertility of the soil are mentioned and in most cases discussed at length. In this respect the observations of the Englishmen who visited the Middle West were remarkably accurate. Foremost among them was Robert Russell.<sup>9</sup> In recording his impressions he tried to have his readers see that the States of Ohio, Indiana, Illinois, portions of Kentucky and Tennessee, Missouri, Iowa and parts of Minnesota, Wisconsin, Michigan and the adjoining Canadian territory might well be regarded as a vast plateau or tableland, level or only mildly undulating throughout the greater part of its extent and with its fertile soil resting upon a limestone and shale base.<sup>10</sup> Setting out from Cleveland in the autumn of 1854 he journeyed southward through what was then mostly heavily wooded territory to the hilly region along the Ohio. The valleys of the Scioto, Miami, and Muskingum rivers contained, in his opinion, the most fertile lands in the State and the only lands equal to the Blue

<sup>6</sup> This was a favorite method of British consular agents and others in reporting on the state of affairs in the United States. For further statement consult the excellent report of [Clare Read and Albert Pell, *Parliament Papers*, 1880, v. 18. *Agricultural Interests Commission, Reports of the Assistant Commissioners.*]

<sup>7</sup> James Shaw, *Twelve Years in America*, 69 (London [etc.] 1867). This volume appears to have been widely read in England.

<sup>8</sup> Edward H[epple] Hall's *Ho! For the West!!*, John Ramsay McCulloch's *A Dictionary, Practical, Theoretical and Historical, of Commerce and Commercial Navigation*, and the Royal Geographical Society's *A Gazetteer of the World* are typical.

<sup>9</sup> Robert Russell, *North America: Its Agriculture and Climate* (Edinburgh, 1857).

<sup>10</sup> *Ibid.*, 84-85.

Grass region of Kentucky and the rich farming section near Louisville for agricultural purposes. None of the lands he saw in either Ohio or Kentucky could compare, said he, with the "marvelously fertile" bottom lands of the Wabash or with the prairie lands of Illinois and Iowa.<sup>11</sup> The soil of Michigan he did not hold in as high regard as that of its sister commonwealths.<sup>12</sup> Nor did he think that the most fertile of the Mississippi Valley soils excelled or even equalled in natural fertility the marly loams of northern France.<sup>13</sup> Other travelers were not less enthusiastic than Russell over the potentialities which the region possessed for agriculture. Thus Laurence Oliphant was impressed by the absence of hills and by the fact that the rolling prairie was well watered by "magnificent streams."<sup>14</sup> William Ferguson declared that the richness of the region could "hardly be imagined" and that in many of the alluvial river valleys the soil was twenty-five feet deep.<sup>15</sup> Edward Dicey, noted for his restraint, described the richness of the territory as "something marvelous." To him the region about Lexington and Louisville was the garden spot of America.<sup>16</sup> James W. Massie not only noted the fertility of the soil, but also the absence of stones so annoying to the farmer.<sup>17</sup> To him the soil seemed "almost spontaneous" in its productiveness. For Shaw, the Illinois country was a "farmers' paradise."<sup>18</sup>

But it was Sir James Caird who more than any other traveler devoted attention to the richness of the soil. Though unquestionably a well-wisher of English farming, Caird, as a stockholder and director of the Illinois Central Railroad, assisted in exploiting its lands by familiarizing prospective English emigrants with

<sup>11</sup> *Ibid.*, 77-79, 92, 122-125.

<sup>12</sup> *Ibid.*, 98.

<sup>13</sup> *Ibid.*, 126.

<sup>14</sup> Laurence Oliphant, *Minnesota and the Far West*, 68 (Edinburgh and London, 1855).

<sup>15</sup> Ferguson, *America by River and Rail*, 367, 418.

<sup>16</sup> Edward Dicey, *Six Months in the Federal States*, 65-66, 137 (London and Cambridge, 1863). This volume was dedicated to John Stuart Mill.

<sup>17</sup> James W. Massie, *America*, 251 (London, 1864).

<sup>18</sup> Shaw, *Twelve Years in America*, 79.

agricultural conditions in the territory through which the company's lines extended.<sup>19</sup> Not content with mere verbal comment concerning the natural fertility of the region, he obtained four samples of prairie soil from lands belonging to the Illinois Central in different parts of the State. These he sent for analysis to Professor Augustus Voelcker, consulting chemist to the Royal Agricultural Society of England. Voelcker's analysis sustained completely the high claims that had been made for the prairie soil, particularly its nitrogen content.<sup>20</sup> Caird did not agree with Russell and others that the soil of France was superior to that of the upper Mississippi Basin, although he did admit that there were tracts in Europe like the plains of Lombardy where the fertility was apparently inexhaustible.<sup>21</sup>

Most English critics and observers were astounded at the size of the Midwest farms. The acreage of the average farm, they noted, was larger in Illinois, Indiana, Iowa, and Missouri than in Ohio, Kentucky, Michigan, and Wisconsin.<sup>22</sup> All were interested in the fact that comparatively little tenancy existed and that the generosity of the Federal Government made it easy for a person to gain absolute title to the land. British officials, for example, were deeply impressed by the provisions of the Homestead Act.<sup>23</sup> Some, however, were of the opinion that an abundance of cheap land encouraged speculation and indebtedness. Caird, for example, declared that many Western farmers were

<sup>19</sup> Cf. S. J. Buck, *Travel and Description, 1765-1865*, 236-237 (*Illinois State Historical Library Collections*, v. 9. Springfield, Ill., 1914).

<sup>20</sup> "I have never before analyzed soils which contained so much nitrogen nor do I find any record of soils richer in nitrogen than yours." Letter from Voelcker to Caird under date of Dec. 28, 1858. Cf. Caird, *Prairie Farming*, 127-130.

<sup>21</sup> *Ibid.*, 81. See also T. W. Foster, *The Mississippi Valley*. Foster's volume was very favorably reviewed in the *London Spectator*, Aug. 29, 1869.

<sup>22</sup> Buckingham, *Eastern and Western States*, 3:241-242; Anthony Trollope, *North America*, 168-172 (London, 1862); Russell, *North America*, 80, 113-114; Ferguson, *America by River and Rail*, 378. Read and Pell, cited above, who were sent by the British Government in the late seventies to investigate agricultural conditions in the United States and Canada, reported in detail concerning the size of Midwestern farms. See Appendix to their *Joint Report*.

<sup>23</sup> Parliament Papers, 1880, v. 18, *Agricultural Interests Commission*; *Royal Commission on Agriculture, Report of Commission and Report of Assistant Commissioners*.

tempted to buy more land than they could afford.<sup>24</sup> Another traveler, Arthur Cunynghame, in suggesting to his countrymen that £300 seemed to him to be the requisite amount of capital with which to commence farming in the Middle West, also cautioned against purchasing too large an acreage. He advised prospective settlers to exercise care in selecting the site for their farms and under no conditions to seek credit from unscrupulous money-sharks who, like vultures, would devour them.<sup>25</sup>

Less attention was paid to farm buildings than might be expected. Russell observed that in the fifties many settlers preferred to hew a farm out of the forest where there was an abundance of fuel and timber than to locate on the open prairie.<sup>26</sup> In the newly-cleared regions the first houses were log cabins,<sup>27</sup> but these were soon superseded by more substantial two-storied structures with basement or cellar. In Ohio many of the houses were constructed of brick. Dicey thought that both the country and the houses about Louisville and Lexington compared favorably with Warwickshire.<sup>28</sup> By 1870 the majority of the farm houses

<sup>24</sup> Caird, *Prairie Farming*, 54-55.

<sup>25</sup> Arthur Cunynghame, *A Glimpse at the Great Western Republic*, 103-106, 108 (London, 1851). In Cunynghame's opinion a capital of £300 was necessary to begin farming in the Des Moines Valley, one of the richest agricultural districts in Iowa. This sum he would expend as follows: outfit in England, £10; passage to America, £24; cost of transportation from seaboard to Iowa, £24; expenses prior to settling, £12; price of 80 acres at \$3.00 per acre, £50; cost of erecting house, £20; team of horses, wagon and harness, £40; fencing, £15; breaking up prairie, £15; farming implements, seed and cow, £15; expense of maintenance first year, £20; extras, £15; surplus for emergency, £25. According to Caird this figure was too high. Cf. Caird, *Prairie Farming*, 87-94. Cunynghame also contended that the great abundance of agricultural land in America and the ease with which it could be purchased, furnished the basis for what seemed to him to be a serious evil, namely, enabling children to be more completely independent of their parents. "Upon slightest reproof he (the child) is ready to be off and 'do for himself', being conscious that by his own exertions he can at any time obtain a competence for himself; but this very feeling early in life gives them (children) a habit of placing a reliance upon their own exertions which can be felt in no other country and causes them almost from childhood to look to resources within their own limits, giving to mere youth an indifference of action rarely witnessed in more densely populated countries."

<sup>26</sup> Russell, *North America*, 117.

<sup>27</sup> Oliphant, *Minnesota*, 70.

<sup>28</sup> Dicey, *Six Months in the Federal States*, 65-66.



in Indiana and Illinois were said to have "an air of comfort about them."<sup>29</sup> Barns and outbuildings were rarely mentioned. Barns in Midwest America, it was pointed out, were not used for the storage of grain crops as in England, but for the winter housing of livestock and fodder. On many prairie farms barns as well as fences were lacking.<sup>30</sup>

No aspect of Midwestern agriculture attracted greater attention in England than crop production. Practically every reference to the West at least mentions the extraordinary advantages which the Western farmers enjoyed for the production of wheat and corn as well as for other field crops. Travelers' accounts abound with descriptions of acreage, methods, yields, and markets.<sup>31</sup> British newspapers, periodicals, consular reports, and other documents of an official nature likewise stress these items.<sup>32</sup> Even the pamphleteers in their controversy concerning the effect of free trade on English agriculture made wide use of statistical material relative to the agricultural output of the Middle West.<sup>33</sup> Little consideration was given to the varieties of wheat grown, the emphasis being rather upon tillage, harvesting, and market-

<sup>29</sup> Parliament Papers, 1880, v. 18, *Agricultural Interests Commission*, 36. Caird explained that in Illinois many frame houses were built during the late fifties by contract, the cost depending upon the size and cost of wages and materials. A small house, 18 by 24 feet, divided into two rooms and a kitchen, with side posts 12 feet high, boarded, lathed, plastered, and roofed with shingles, cost in 1858 only £40; before the Panic of 1857 the cost was £60. Cf. Caird, *Prairie Farming*, 50.

<sup>30</sup> *Ibid.*

<sup>31</sup> Buckingham, *Eastern and Western States*, v. 1-3; Caird, *Prairie Farming*; Cunyngame, *Great Western Republic*; Dicey, *Six Months in the Federal States*; Ferguson, *America by River and Rail*; Massie, *America*; Oliphant, *Minnesota*, Sir S. Morton Peto, *The Resources and Prospects of America* (London and New York, 1866); Russell, *North America*; Trollope, *North America*; C. R. Weld, *A Vacation Tour in the United States and Canada* (London, 1855).

<sup>32</sup> See especially the *London Times*, *The Farmers' Magazine*, *The Field*, *The Farm*, *The Garden*, the *Journal of the Royal Agricultural Society*, the *Gardeners' Chronicle*, and *Consular Reports* for years 1850-1870, as well as Parliament Papers for 1880-1882.

<sup>33</sup> John Leng, *American Competition and the Future of British Agriculture*, and William E. Bear, *The British Farmer and His Competitors* (London [1888]) are typical examples of this pamphlet literature. For additional titles consult the *Catalogue of the Library of the Royal Agricultural Society of England*.

ing.<sup>34</sup> The travelers in their enthusiasm failed, with few exceptions, to note the dangers which confronted the Western wheat grower, namely, drought, wind and hail storms, the Hessian fly, and grasshopper plagues. These dangers, however, were not overlooked by the special agents who were sent to investigate agricultural conditions in America.<sup>35</sup> Inasmuch as the Old World was relatively unfamiliar with corn or maize, considerable attention was devoted to it.<sup>36</sup> Other field crops, notably buckwheat, oats, rye, barley, hemp, flax, and potatoes were frequently mentioned though they received much less space than wheat and corn.

Under normal conditions, it was reported, every acre planted or seeded by the Western farmer returned handsome yields. Particularly was this true of wheat and corn. As new acreage was put under cultivation from year to year, total production increased with amazing rapidity, a fact which became better known in England after the beginning of the American Civil War. Perhaps no one was more instrumental in educating his countrymen in this respect than the distinguished English novelist, Anthony Trollope: "I confess," he wrote, "that to my mind statistical amounts do not bring home any enduring idea. Fifty million bushels of corn and flour simply seems to mean a great deal. It is a powerful form of superlative, and soon vanishes away as do other superlatives in this age of strong words. I was at Chicago and at Buffalo in 1861. I went down to the granaries and climbed up into the elevators. I saw the wheat running in rivers from one vessel into another, and from the

<sup>34</sup> Ferguson reported in 1856 that flour manufactured from wheat grown in the Valley of Muskingum brought the highest price of any flour in the New York market. Ferguson, *America by River and Rail*, 287-288.

<sup>35</sup> See, for example, the *Joint Report* of Read and Pell, 4. In this report the results of several locust plagues including those of Minnesota in 1857, Texas in 1858, and Kansas in 1866 are stressed.

<sup>36</sup> Some of the travelers were impressed with the many uses to which corn was put, ranging all the way from fuel to food. Thus Weld, for example, was apparently impressed by the fact that it was a favorite article of diet among all classes of people in America, "being made into an infinite variety of bread, cake, puddings, &c, most of which are eaten with molasses." Weld, *Vacation Tour*, 232-233.



railroad vans up into the large bins on the top stories of the warehouses—for these rivers of food run up hill as easily as they do down. I saw the corn measured by the forty-bushel measure with as much ease as we measure an ounce of cheese and with greater rapidity. I ascertained that the work went on week-day and Sunday, day and night, incessantly—rivers of wheat and rivers of maize ever running. I saw the men bathed in corn as they distributed it in its flow. I saw bins by the score laden with wheat, in each of which bins there was space for a comfortable residence. I breathed the flour and drank the flour, and felt myself to be enveloped in a world of breadstuff. And then I believed, understood, and brought it home to myself as a fact that here in the corn lands of Michigan, and amid the bluffs of Wisconsin, and on the high table plains of Minnesota, and the prairies of Illinois had God prepared the food for the increasing millions of the Eastern World as also for the coming millions of the Western . . . I began then to know what it was for a country to overflow with milk and honey, to burst with its own fruits and be smothered by its own riches."<sup>37</sup>

More than one Old World observer entertained the opinion that Americans did not fully comprehend the agricultural possibilities of the Mississippi Valley. Among them was Sir James Caird. Testifying in 1881 before the British Royal Commission on Agriculture, headed by the Duke of Richmond, Caird told about his visit with President Buchanan at the White House in 1858, having made Buchanan's acquaintance when he represented the United States at the Court of St. James. "I had just returned from the West," said Caird, "and to show how very little the Americans themselves seemed to know of the wonderfully productive character of the whole Valley of the Mississippi and to the West and Northwest of it, I may mention that we were talking about the qualities of the land that I had seen in the West and he asked me what I thought of the Mississippi Valley; I described what I had seen of it and I told him that I thought very highly of its future prospects. He said to me—'Do you

<sup>37</sup> Trollope, *North America*, 1:169.

think it would be capable hereafter of ever feeding 20,000,000 of people?" I said 'I should think at least 200,000,000.'"<sup>38</sup>

The Englishman's admiration for the Mississippi Valley was not confined to expanse and fertility of territory and bumper crops. The tools and machines employed by the Western farmer were accorded unstinted praise.<sup>39</sup> Labor was scarce and costly<sup>40</sup> and in more than one Old World account the hours and character of labor on the English and American farm were compared. Hours of labor on the Midwest farm during the summer months were long. The men rose at 4:30, breakfasted at 5:30, and were in the field at 6. After a noon hour extending from 12 to 1:30 they worked on to 6 or 7 o'clock. The English were amazed by the amount of hard and constant work. Save at harvest time, no English farmer or laborer expended, they declared, anything like the same time and strength as the Western farmer. Without machinery this ceaseless work would, in their opinion, reduce farming to semi-slavery. Even with the machine, they pointed out, many American farmers, both in the East and West, were broken and bent by incessant toil.<sup>41</sup> All agreed that American-

<sup>38</sup> Parliament Papers, 1882, *Royal Commission on Agriculture, Minutes of Evidence*, 1:168.

<sup>39</sup> Caird, *Prairie Farming*, 75; John Donaldson, *British Agriculture*, 169-250 (London, 1860); R. S. B., "Recollections of Rambles through American Farms," in the *Farmers' Magazine* (ser. 3), 20:377-381 (November, 1861); "Agricultural Commerce in the Lake Districts of America," in the *Farmers' Magazine* (ser. 3), 28:405 (November, 1865); Ph. Pusey, "On Mr. M'Cormick's Reaping-machine," in the Royal Agricultural Society of England, *Journal*, 12:160 (1851); Anthony Hammond, "Use of Reaping-Machines," in *ibid.*, 17:339-341 (1856); and C. W. Eddy, "American Implements and Methods of Economizing Labour," in *ibid.*, 20:109-130 (1859); Parliament Papers, 1880, *Agricultural Interests Commission, Report of Assistant Commissioners*, 5; Russell, *North America*, 108, 114.

<sup>40</sup> Wages on western farms from 1850 to 1870 varied considerably because of the Panic of 1857 and the Civil War. On an average, wages by the month ran from \$12 to \$20 with board, and by the day from 60 cents to \$2.00, depending upon whether the hired laborer furnished his own board. The season for hired help extended usually from April 1 to November 1. Cf. Parliament Papers, 1881, *loc. cit.*, 36; Frederick Gerhard, *Illinois as It Is*, 316 (Chicago, 1857).

<sup>41</sup> On this subject see the *Supplementary Report* by John Clay, Jr., Parliament Papers, 1882, *Royal Commission on Agriculture, Reports of Assistant Commissioners*.

made tools and machines were lighter, better made, and easier to handle than those of British design and manufacture. While they appreciated the conditions which fostered the purchase of so much machinery, they were, nevertheless, fully aware that the installment plan of purchase sometimes tempted the farmer to buy more than he could afford.<sup>42</sup>

One circumstance continually caused astonishment, namely, the failure of the farmer to adequately house and care for his machinery. The British could not understand why the farmer who worked so hard for the money with which to acquire such costly and delicate machines as drills, mowers, reapers, and threshers, should let them go unoiled when in use, and permit them to stand out-of-doors the year round. They could see no reason why the farmer by means of a few poles and a ton or two of straw should not protect his implements and machinery. Yet so rarely was this done that it proved the exception to a very general rule of wanton negligence. In view of this they concluded that the rumors of poorly constructed machines were untrue and that the fault for broken-down and worn-out machines rested with the farmer and not with the manufacturer.<sup>43</sup>

Other aspects of Midwestern agriculture met with strong disapproval at the hands of the English. In the first place, they did not altogether like the Western farmer's method of tillage and cultivation. Confronted with a large acreage and scarcity of labor, and driven relentlessly on by the American habit—bordering almost on nervous anxiety—of getting things done in a hurry, many Westerners, the English observed, did little more than scratch the surface of the soil. Plowed carelessly, often harrowed only once and sometimes not at all, the seed-bed was

<sup>42</sup> Parliament Papers, 1880, *Agricultural Interests Commission, Report of Assistant Commissioners*, 37. On the subject of installment buying see William T. Hutchinson, *Cyrus Hall McCormick, Seed-time*, 350-376 (New York and London [1930]). Dicey, journeying from Louisville to Lexington, Kentucky, was much impressed with the great quantities of agricultural implements which he saw at the railroad stations. Dicey, 65.

<sup>43</sup> The case against the farmer on this point is well stated by Read and Pell in their *Joint Report*, 5.

far from perfect. Fortunately fertility frequently made up in part for lack of cultivation. Even so, the Western farm, acre for acre, they asserted, yielded less than the better English farms.<sup>44</sup>

In connection with cultivation, one finds considerable difference of opinion regarding the prevalence of weeds and the efforts made to get rid of them. Cunynghame tells us that weeds of all kinds, many of them of rank growth, were to be found in all those parts of the West which he visited, and that two-thirds of the labor expended was used in getting rid of them along with the stiff roots of prairie grass.<sup>45</sup> Russell agreed that there were plenty of weeds but believed that the much-used method of planting corn and potatoes in checks or squares of 30 to 36 inches, thus enabling the farmer to cultivate "both ways," kept the weeds under control.<sup>1</sup> He offered no remedy for eradicating weeds from the pasture lands which in parts of Ohio, he noted, were almost overgrown.<sup>46</sup> Read and Pell in their *Joint Report* declared that morning-glory, wild buckwheat, cockle, sunflower, and wild pigeon grass abounded in the West. Whole sections of grain fields, they reported, were mostly weeds and wild grasses, and when cut and bound in sheaves were used for fuel at threshing

<sup>44</sup> The prairie land was extremely tough and hard to break the first time. A four-ox team with a 36-inch plow, or a three-horse team, would break from two to three acres per day. Once broken, the prairie land was in subsequent years often not plowed more than three inches deep. Occasionally wheat was sown while the corn was still standing, in which case the sower was on horseback, the horse's ears being covered with a cloth to keep out the wheat as it was distributed over the top of the standing corn. After the corn was cut an iron railway rail 28 feet long with a "shoe" at each end was drawn by two horses across the rows to break down the stalks which were afterward collected and burned. For strictures on western tillage and cultivation consult *Parliament Papers*, 1880, *Agricultural Interests Commission, Report of Assistant Commissioners*; *Royal Commission on Agriculture* (1882), *Report of Assistant Commissioner John Clay, Jr.*; Dicey, *Six Months in the Federal States*, 137; Buckingham, *Eastern and Western States*, 3:408-409; Russell, *North America*, 83, 115. Frederick Law Olmsted, who made extensive excursions to the rural districts of England about the middle of the nineteenth century, did not agree with the prevailing notion that English tillage was superior to that in America. See his *Walks and Talks of an American Farmer in England*, 177-193 (New York, 1852).

<sup>45</sup> Cunynghame, *Great Western Republic*, 97.

<sup>46</sup> Russell, *North America*, 81-82.

time. Yet they were of the opinion that because of the dryer climate weeds were far less troublesome in the West than in England.<sup>47</sup>

If the English critic of the West was severe in his arraignment of the Western farmer's methods of cultivation, he was even more condemnatory of the treatment of his land as far as fertilization and drainage were concerned. In the opinion of the English the American farmer and particularly the Westerner was a soil murderer. He apparently knew little and cared less about crop rotation. Year after year the same fields or tracts were seeded with the same crop. Ohio lands, for example, were planted to corn for twenty to thirty years in succession. Occasionally a farmer would "rest" his wheat lands with a crop of corn or clover. No fertilization of any kind prevailed. Manure was regarded as a nuisance. On those farms where the stock was fed out-of-doors little manure accumulated. Where it did accumulate and where the land was not too exhausted, the buildings which became surrounded with manure were pulled down and moved to a clear spot. Straw when threshed, instead of being plowed under, was burned. Root crops, grown so extensively as a part of the English rotation, found little place in America where for feeding purposes their counterpart was corn. Only the rich river valley lands could stand such treatment without showing impairment of fertility. Furthermore, the English noted that lands which yielded twenty-five to thirty or more bushels of wheat to the acre in 1850, bore only twelve to eighteen bushels by the decade of the seventies. And what was true of wheat was likewise true of corn.<sup>48</sup>

<sup>47</sup> Read and Pell, *Joint Report*, Parliament Papers, 1880, *Agricultural Interests Commission*, 3-4.

<sup>48</sup> Though Caird and others were interested in painting the West as attractively as possible for prospective emigrants, they realized that the virgin fertility of the region would ultimately be impaired by constant recropping. See Caird's testimony before the Great Britain Royal Commission on Agriculture, Parliament Papers, 1882, *Minutes of Evidence* taken before Her Majesty's Commissioners on Agriculture, v. 1. For critique of American methods in handling the soil consult *Joint Report* of Read and Pell, 34-35; Russell, *North America*, 93, 100, 114. Cunynghame pointed out that on virgin soils fertilization was not only unnecessary but unprofitable, particularly in the case of wheat. See his *Great Western Repub-*



Drainage was practically unknown in the West. Regarded even in the East as too costly, recourse to its use by the Mississippi Valley farmer would have netted him, in the opinion of the English, millions of dollars, particularly in those sections where fruit growing was attempted. Fruits of every description native to the temperate zone flourished where there was good drainage. Unfortunately, in many regions the retentive clayey loam subsoil prevented adequate drainage and fruit trees perished because of "wet feet." A contributor to one leading British periodical reported that in the three years, 1855-1858, Illinois alone lost three million dollars in fruit trees largely because of lack of drainage.<sup>49</sup>

In connection with fruit growing mention may be made of one farm specialty which elicited praise from the British travelers, namely, grape culture. Russell found the Catawba grape flourishing on the hills along either side of the Ohio and extending along the banks of several streams in southern Illinois and Indiana and eastern Missouri.<sup>50</sup> Weld reported that Nicholas Longworth of Cincinnati not only owned extensive vineyards but had imported Frenchmen from Champagne to cultivate them.<sup>51</sup> Ferguson, more enthusiastic over the culture than either Russell or Weld, enumerated the more important varieties which he found growing along the Ohio and described the methods of cultivation. He, too, visited Longworth's wine cellars which he found smaller than those in France but employing identical methods. The wines, he thought, were a very good imitation of claret, champagne, and hock.<sup>52</sup>

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lic, 97. Russell, too, thought that some lands were too rich for wheat and that their fertility should be reduced by cropping with corn, oats, and barley. See his *North America*, 98. In this connection it should be remembered that both Cunningham and Russell visited the Mississippi Valley early in the fifties.

<sup>49</sup> H. S. O., "The Present Condition of American Agriculture," in the *Farmers' Magazine* (ser. 3) 16:334-336 (October, 1859); see also Russell, *North America*, 118.

<sup>50</sup> Russell, *North America*, 87.

<sup>51</sup> Weld, *Vacation Tour*, 207-208.

<sup>52</sup> Ferguson, *America by River and Rail*, 272-273. The chief varieties Ferguson found growing were, aside from the Catawba, the Cape or Schuylkill, the Herbe-mont, the Isabella, and the Missouri.

Both the quality and the treatment of Western livestock came in for severe strictures. With the exception of a small number of Shorthorns, few well-bred cattle were found in the West.<sup>53</sup> In fact, one critic claimed that nine-tenths of the livestock, hogs excepted, were scrubs in comparison with the livestock of England.<sup>54</sup> Yet the cattle, when stall-fed, produced good beef, although the British product was thought to be superior.<sup>55</sup> The best sheep were Merinos and their wool was pronounced good. Although the Western mule was praised, the horse was rated inferior. It was the Mississippi Valley farmer's treatment of his livestock that roused the ire of the English. His failure to rid his pastures of weeds, to cut his winter supply of hay before it was dead ripe, and, above all, to provide his cattle with shelter, much less bedding, during the severe winter weather was roundly condemned. Old World observers noted too the cruelty and torture practised on cattle about the farm and at country depots and on railway trains.<sup>56</sup> Nor could the English overlook the waste in cattle caused by the lack of railroad fencing. Along the Little Miami Railroad alone in the short space of four years no less than 1,600 cattle were killed by passing trains.<sup>57</sup>

The hog, the British thought, met the requirements of the Mid-western farm more perfectly than any other animal because of its omnivorous character, its hardiness, and the great abundance of cheap food. The Western farmer, the British declared, had reduced pork production to scientific principles. The practice of allowing fattening swine to "hog down" a cornfield was strongly commended, as was also that of allowing them to have access to the offal of cattle that had been fed on whole corn. Every critic agreed that the swine stock of America was generally superior to that of Great Britain. "No where in the world," ran a British official document, "can such marvelous herds of swine

<sup>53</sup> Caird, *Prairie Farming*, 36; Read and Pell, *Joint Report*, 6.

<sup>54</sup> Parliament Papers, 1882, *Royal Commission on Agriculture, Supplementary Report on American Agriculture*, by John Clay, Jr.

<sup>55</sup> Henry A. Murray, *Lands of the Slave and the Free*, 1:158-159 (London, 1855).

<sup>56</sup> For summary see Read and Pell, *Joint Report*, 7-9.

<sup>57</sup> Ferguson, *America by River and Rail*, 321.

be found as in the corn states of America. . . Here the pig is monarch of all he surveys."<sup>58</sup> Incidentally, the Berkshire hog was the most common breed. The Poland-China, which ranked second in popularity, put on more weight and fattened more quickly, but the pork was inferior in quality.

In their effort to balance the advantages and disadvantages of Midwestern American agriculture as compared with their own, the British did not overlook the fact that for the years surveyed by this paper the British farmer sold his produce directly in the dearest and bought his clothing and implements in the cheapest market in the world. The Western farmer on the other hand, despite his vast acreage and the fertility of his soil, sold in the cheapest and bought in the dearest market because of high tariffs. Furthermore, he was confronted with transportation costs that in some cases were wellnigh confiscatory. Moreover, in disposing of his product he was at the mercy of speculative grain merchants whose main interest was in acquiring the product of the farmer's industry at the lowest price possible. Not until rates for land and ocean transportation were lowered would the Midwestern farmer become a serious competitor of the British agriculturist.<sup>59</sup>

As we glance back over these British comments it is exceedingly illuminating to see how little of Western agriculture escaped attention. Yet it remained for an American, an up-State New Yorker named Xerxes A. Willard, to summarize the major weaknesses not only of Midwestern farming but of Eastern farm-

<sup>58</sup> Parliament Papers, 1880, *Agricultural Interests Commission, Report of Assistant Commissioners*, 18:12. In some communities middlemen bought both hogs and corn from farmers and then fattened the hogs for market. Frequently a farmer would agree to fatten hogs not his own, receiving a certain price per pound for the weight gained by the hog between the time it was brought to him and when it was sent to the slaughtering house. Cf. Russell, *North America*, 80, 115-116.

<sup>59</sup> Bear, *British Farmer*, 43; Cunynghame, *Great Western Republic*, 98; Augustus Mongredien, *The Western Farmer of America*, 5ff. (London, New York [etc.] 1880). The decreased cost of transport for American grain was not entirely responsible for the misfortune which overtook the British farmer after the Franco-Prussian War. The collapse of British trade occasioned by the world-wide depression of the early seventies greatly checked the growth of the consuming power at home. Moreover, a series of bad seasons caused by bleak springs and rainy summers produced short crops. Cf. Ernle, *English Farming*, 376.



ing as well, and to set forth our reputation, in so far as agriculture was concerned, on the other side of the Atlantic. For many years professor of agriculture at the University of Maine, a contributor to the *Journal* of the Royal Agricultural Society of England and to other learned publications, a widely-traveled and close student of rural life, he was easily one of the leading agricultural authorities of his time. An extract from an address delivered by him before the New York State Agricultural Society on February 13, 1867, may well bring this paper to a close.

"In comparing the agriculture of the two nations I must say that Britain is far in advance of us. They have an abundance of capital in their business. Our farmers when they get a dollar ahead from their farms invest it in more land, or in bonds and mortgages, and are always pinched for money to make permanent improvements. The English have a settled system of rotation in crops, of manuring, of drainage, of breeding and fattening animals. They thus keep up the fertility of their soil and make their livestock pay both in meat and manures. Many of our farmers have no regular or uniform system of farming. Half the farms of the State are foul with weeds. We are only just beginning to appreciate the full value of manures. We are too impatient and hasty in our culture. We employ too little labour, and kill ourselves with hard work. Many make such slaves of themselves in leading their labourers in the field, that they find no time and have no inclination to inform themselves as to the best practice in farming. If there is any time to spare, it is devoted to politics and the news of the day. They work *too much* and think *too little*. They become, too often, early broken in constitution; they make up in sweat and bone and sinew that which properly should have been realized by thought and well arranged plans.

"Our farmers are excellent politicians and are much more intelligent on general topics than the English, but truth compels me to say, they are not as good farmers."<sup>60</sup>

*Columbia University.*

<sup>60</sup> Xerxes A. Willard, *English Farming, An Address Delivered before the New York State Agricultural Society, Feb. 13, 1867, 26-27.*

## TRANSPORTATION AND THE LIVESTOCK INDUSTRY OF THE MIDDLE WEST TO 1860<sup>1</sup>

CHARLES T. LEAVITT

The influence of the three major improvements in transportation on the livestock industry of the Middle West during the pre-Civil War era,<sup>2</sup> namely, the development of steamboats, the completion of the Erie and Ohio canals, and the connection of the Middle West with the East by railroads is the theme of this paper. Since the livestock industry as a whole did not exhibit the striking advances or changes which took place in grain raising as a result of these improvements, the extent of their influence and the reasons why their influence was not greater must be examined.

Beef-cattle and swine raisers had found a means of driving their surplus livestock overland to the Atlantic seaboard, and of shipping their salted pork and beef southward long before the steamboat was an important influence on western waters.<sup>3</sup> In 1810 and 1811 it was estimated that from forty thousand to seventy thousand hogs were being driven eastward over the mountains,<sup>4</sup>

<sup>1</sup> A paper presented at the joint meeting of the Agricultural History Society with the American Historical Association and other historical societies at Urbana, Illinois, on December 29, 1933.

<sup>2</sup> In this paper the treatment of the livestock industry is limited to the raising of beef cattle, swine, and sheep, and to dairying. The Middle West of the pre-Civil War era is considered as the region west of Pennsylvania and New York and east of the Missouri River, plus the States of Kentucky and Missouri.

<sup>3</sup> Beef cattle had been sent over the mountains from Kentucky in considerable numbers by 1795, and from Ohio by 1800. See William Strickland, *Observations on the Agriculture of the United States*, 61 (London, 1801); R. C. Downes, "Trade in Frontier Ohio," in the *Mississippi Valley Historical Review*, 16:493-494 (March, 1930).

<sup>4</sup> *Relf's Philadelphia Gazette*, Sept. 14, 1810; B. H. Meyer, ed., *History of Transportation in the United States Before 1860*, 110 (Washington, 1917).

while 27,642 barrels of pork and bacon destined for the South passed the falls of the Ohio in the fiscal year 1810-1811.<sup>5</sup> Although the first steamboat voyage down the river was made in 1811, the influence of the steamboat on the economic growth of the Ohio Valley was not apparent until after the first upstream voyage was made in 1817.<sup>6</sup> During the next decade, however, pork exports passing the falls of the Ohio had increased to 114,000 barrels.<sup>7</sup> The average yearly receipts of pork and bacon at New Orleans from the interior for the years 1826 to 1830 were 300 percent more than the corresponding receipts from 1822 to 1825, and the first five years of the thirties showed an increase in average receipts of 121 percent over the last half of the twenties.<sup>8</sup> It seems impossible to believe that the steamboat did not have some influence on this development, though it is true that pork could be exported by rafts and boats. The compiler of the *Cincinnati Directory* of 1819 pointed out that the difficulty of importing prior to the advent of the steamboat had at the same time limited the export trade, and went on to say, "It was not until the introduction of steamboats upon our waters, that much attention was paid to exportation."<sup>9</sup>

The relatively greater fall in wheat prices after the Panic of

<sup>5</sup> United States Treasury Department, Bureau of Statistics, *Report on Internal Commerce of the United States*, 187 (Washington, 1887).

<sup>6</sup> Meyer, *History of Transportation*, 102ff.

<sup>7</sup> For 1822, see William N. Blane, *An Excursion Through the United States and Canada*, 118 (London, 1824).

<sup>8</sup> *Report on Internal Commerce of the United States*, 195-196, 200-202, 216-217. This report is the source of all figures on imports into New Orleans from the interior which are used in this paper. Up to 1847-48 figures on imports into New Orleans, as given here, have a possible inaccuracy of 5 to 10 percent, and from 1847-48 onward of 15 to 20 percent. The inaccuracy is because the figures are given in four or five different container sizes, and the evidence is contradictory as to the size of certain of these containers; while in certain cases, figures on two or more containers are grouped in the official figures. The ratios used here are: barrels, 200 lbs.; tierces, 304 lbs.; boxes, 400 lbs.; hogsheads, 800 lbs.; "barrels-tierces" of pork, 200 lbs.; "barrels-boxes," 300 lbs.; "casks, etc.," 700 lbs.; "casks-hogsheads," 700 lbs. See the *Cincinnati Gazette*, Jan. 15, 1844, p. 3; Nov. 20, 1856, p. 1 (chief reliance); *Prairie Farmer*, 10:382 (December, 1850); Charles Cist, *Sketches and Statistics of Cincinnati in 1851*, 282 (Cincinnati, 1851).

<sup>9</sup> *Cincinnati Directory of 1819*, 52 (Cincinnati, 1819).

1819 also stimulated livestock raising.<sup>10</sup> Furthermore, the pork-packing industry appeared in the West as a large-scale, commercial industry around 1818, due to the advent of Eastern merchants and capitalists at some of the Ohio River towns, bringing with them sufficient money to finance large-scale packing.<sup>11</sup> Still another factor was the rapid development of a pork market in the Lower South during the twenties among planters who preferred to grow cotton rather than raise hogs.

(Beef-cattle raising was not appreciably benefited by improvements in steamships or canals. Beef, unlike pork, could not be preserved very satisfactorily by salting, as its tastiness was impaired if so treated. (The result was that most of the surplus beef cattle were driven eastward over the mountains before the time of the railroads. (From 1820 to 1860 the combined beef exports from the Middle West by canal and river rarely exceeded 10 percent of total pork exports.<sup>12</sup>)

The Erie Canal was opened to navigation in 1825 and the main Ohio canal was completed from Cleveland to Portsmouth in 1832. The Miami and Maumee canals connecting Cincinnati with the Great Lakes were completed in the late thirties.<sup>13</sup> As the Indiana and Illinois canals were not extended to the Great Lakes until the late forties, they may be ignored in this connection.<sup>14</sup> The Erie Canal and the western canals were probably of little influence in promoting swine raising. At all times the amount of pork and bacon carried on the Erie Canal was insignificant as compared with that sent down the Mississippi River. In 1839, a specimen year, Buffalo received 23,667 barrels of pork and bacon as compared with 197,490 barrels at New Orleans:

<sup>10</sup> United States Census Office, Eighth Census, 1860, *Agriculture of the United States in 1860*, cxxx.

<sup>11</sup> *Cincinnati Daily Gazette*, Feb. 23, 1856. The article is said to be based on a review of Cincinnati commerce made in 1823.

<sup>12</sup> For the Mississippi River, see footnote 8 on receipts into New Orleans. For the Erie Canal, see *Fisher's National Magazine*, 2:608 (1845) on statistics before 1840, and the index of *Hunt's Merchant's Magazine* for statistics after 1840.

<sup>13</sup> Meyer, *History of Transportation*, 288.

<sup>14</sup> *Ibid.*, 506, 514.

the ratio for previous and succeeding years shows no important change.<sup>15</sup>

A number of reasons may be tentatively given as to why the Erie Canal did not become an important outlet for pork products. In Ohio, where canal connections were best, large-scale swine raising tended to center in the southeastern portion of the State, while the northern parts of Indiana and Illinois were not settled until the late forties and fifties.<sup>16</sup> Secondly, pork packing in pre-refrigeration days tended to locate along the Ohio River and its tributaries, where winter temperatures continued near freezing but did not go below frequently enough to interfere with meat-cutting.<sup>17</sup> As a result, the much larger proportion of pork and bacon destined for Eastern seaboard cities went by way of New Orleans rather than through the Ohio and Erie canals.<sup>18</sup>

The rapid growth of dairying and sheep raising in Ohio during the forties was mainly due to the Erie and Ohio canals as they were used in transporting wool, butter and cheese. It is also significant that the real expansion of both sheep raising and dairying took place a full decade after the canal facilities were available. There was an actual falling off in the amount of wool shipped eastward over the Erie Canal between 1835 and 1840;<sup>19</sup> while both the receipts of butter and cheese arriving at Cleveland by way of the Ohio Canal between 1831 and 1840, and the receipts

<sup>15</sup> For Buffalo, see *Hunt's Merchant's Magazine*, 4:197 (1841); for New Orleans see footnote 8.

<sup>16</sup> See the dot maps on swine distribution in Percy W. Bidwell and John I. Falconer, *History of Agriculture in the Northern United States, 1620-1860*, 438 (Washington, 1925).

<sup>17</sup> See the article by the writer, "Some Economic Aspects of the Western Meat-Packing Industry, 1830-1860," in the *Journal of Business of the University of Chicago*, 4:76 (1931).

<sup>18</sup> For figures on the destination of exports from New Orleans after 1839 see the September 1 annual statements of the *New Orleans Price Current*, and the yearly indices of *De Bow's Review* and of *Hunt's Merchant's Magazine*. These figures show a ratio of 2 or 4 to 1 in favor of export to the East by way of New Orleans.

<sup>19</sup> Israel D. Andrews, *Report . . . on the Trade and Commerce of the . . . Great Lakes and Rivers*, 92 (Washington, 1853).

of butter at New Orleans from 1826 onward remained at practically a dead level or showed no important increase until 1840.<sup>20</sup> While this does not indicate that these two agricultural industries did not expand, it does show that the increasing population of the Middle West was absorbing the surplus.

However, the canals were ready for use. [The opportunity for the expansion of western sheep raising came with the extensive decline of the industry in the East during the early forties due to low prices for fine wool, and the greater profitableness of dairying. For the Westerner, the low price of wool was balanced by the fact that beef and pork prices had gone still lower; while signs of loss of soil fertility in parts of Ohio encouraged the farmers to turn to something like sheep raising.<sup>21</sup> Exports over the Erie Canal rose from 107,794 pounds in 1840 to 8,805,817 pounds in 1850.<sup>22</sup> The number of sheep in Ohio increased 94 percent during the forties; and outside of Ohio and Kentucky, where sheep raising had previously been insignificant, the increase was 144 percent.

Ohio dairying, centering in the Western Reserve, expanded similarly. Between 1842 and 1847, the amount of cheese cleared for markets from Ohio canals increased 435 percent,<sup>23</sup> while the cheese receipts at the port of Cincinnati from 1847 to 1852 increased 80.5 percent.<sup>24</sup> Butter shipments to New Orleans from the interior showed a similar increase.<sup>25</sup> Although canal facilities played their part, other important factors were also at work. Butter prices between 1841 and 1851 remained at 89.6 percent of their level during the previous six years, while beef and pork prices fell three and four times this amount, respectively, on a

<sup>20</sup> For Cleveland, see *Fisher's National Magazine*, 2:608 (1845). New Orleans receipts in 1826, 2,926 kegs and 9,100 firkins. For 1837-38, 11,967 kegs and 279 barrels.

<sup>21</sup> Bidwell and Falconer, *History of Agriculture*, 414-418; Chester W. Wright, *Wool Growing and the Tariff*, 138-139, 142 (Boston, 1910).

<sup>22</sup> Andrews, *Report*, 92.

<sup>23</sup> United States Patent Office, *Report* (1847), 653. From 1,230,168 to 6,599,170 pounds.

<sup>24</sup> *Western Journal*, 7:273 (1852).

<sup>25</sup> 1839-40 receipts,—10,429 kegs and 790 barrels. 1850-51 receipts,—78,894 kegs.



percentage scale.<sup>26</sup> With this in view, and the probable understanding that northeastern Ohio lands could not compete with the prairie lands in grain, beef, or swine raising, the farmers of the Western Reserve were ready to turn to dairying.

A short survey of beef-cattle and swine raising in the Middle West at the beginning of the fifties when the railroads made a rather dramatic entrance on the scene is of interest. Beef-cattle raising to 1850 had maintained its relative importance in the agricultural economy of the West, despite the fact that up to that time western farmers were still largely dependent on driving their surplus cattle eastward on foot. In 1850, the Middle West possessed 3,314,430 beef cattle as compared with 2,690,203 in the East.<sup>27</sup> By 1850 the center of cattle raising had shifted to the prairies of Illinois and Missouri, where farmers kept 83 and 98 cattle per hundred of the rural population, respectively, as compared with 48 to 55 cattle per hundred in the other States of the Middle West.<sup>28</sup> However, cattle raising continued important in the hill districts of southern Ohio,<sup>29</sup> and in the hills and mountains of Kentucky.<sup>30</sup> Cattle from Illinois and Missouri were corn-fed for a year to eighteen months in the Scioto Valley of Ohio, and, occasionally in the Blue Grass of Kentucky.<sup>31</sup> Apparently driving costs were not an undue proportion of the final sale value; in the late forties, when beef prices were relatively low, actual driving expenses from Kentucky were 19 to 26 percent of the total sale price.<sup>32</sup>

<sup>26</sup> The quarterly New York prices are from the *New York Shipping and Commercial List*. January, 1825 index price 100, average 1835-1840, pork 145, beef 147.5, butter 125. Average 1841-1851, pork 81, beef 101, butter 112.

<sup>27</sup> The beef cattle of 1850 equal the "oxen" plus the "non-dairy cattle" of the 1850 census.

<sup>28</sup> The rural population as a ratio was used because the 1850 census figures on "farmers" excluded slaves. In obtaining the rural population, all towns containing more than 1,000 were deducted.

<sup>29</sup> Ohio State Board of Agriculture, *Annual Report* (1849) 4:47, 103; (1850) 5:236, 319.

<sup>30</sup> *Monthly Journal of Agriculture*, 1:581 (1846).

<sup>31</sup> *Genesee Farmer* (n.s.), 10:214 (1849) on Scioto Valley feeders. *Monthly Journal of Agriculture*, 1:581 (1846) on Blue Grass feeders.

<sup>32</sup> *Ibid.*, 1:584 (1846); 3:154 (1847).

The Ohio-Mississippi river outlet for the pork and bacon surplus seems to have been sufficient to permit a healthy expansion of swine raising. The average yearly receipts of pork and bacon at New Orleans from the interior jumped 505 percent for the five years ending in the fall of 1835 to a corresponding period ending in the fall of 1850.<sup>33</sup> At the same time the 1850 census showed that Middle Western farmers possessed 3.7 times as many swine as those of the East. The great swine raising districts at that time, as indicated by dot maps showing distribution, were southwestern Ohio, central and western Kentucky, and the southern half of Indiana.<sup>34</sup> However, Illinois ranked just below Indiana and was appreciably above Ohio in the number of swine held per farmer.<sup>35</sup>

From the viewpoint of maturity of agricultural development, the Middle West was divided into two districts, Ohio and Kentucky constituting one, and the region to the west and north, the other. The settlement of the first region was approaching completion, and its period of rapid agricultural expansion was past. Soil exhaustion, already evident in some of the older sections of Ohio,<sup>36</sup> was causing increased attention to dairying and sheep raising. Swine and beef-cattle raising had passed their heyday; the increase of all cattle in Ohio and Kentucky during the forties was only 5.2 percent, and of swine only 10.3 percent. The region to the west of these States, in places thinly or totally unsettled, possessed comparatively richer and fresher soils; the prairies of Illinois, Iowa, and Missouri, once given adequate transportation facilities, were capable of rapid exploitation with cattle and grain raising.

Railroad connections between New York City and the Great Lakes were completed in 1851.<sup>37</sup> Philadelphia had secured rail contact with the Ohio River by 1852, and Baltimore, the follow-

<sup>33</sup> The average receipts from 1830-31 to 1834-35 were 139,495 barrels. That of 1845-46 to 1849-50, 706,198 barrels. See previous citation on source and basis of calculation.

<sup>34</sup> Bidwell and Falconer, *History of Agriculture*, 438.

<sup>35</sup> Swine per farmer, Indiana, 13.9; Illinois, 13.6; Ohio, 7.3.

<sup>36</sup> *Western Farmer and Gardener*, 3:19-20 (1841).

<sup>37</sup> Meyer, *History of Transportation*, 371.



ing year.<sup>38</sup> Chicago and points in Indiana and Ohio had through connections with the East by 1853,<sup>39</sup> and routes were soon pushed forward to the Prairie States. The completion of interconnecting lines in the West progressed rapidly in the fifties. The maps of yearly railroad building prepared by Professor Frederic L. Paxson show that Ohio's network was built mainly between 1848 and 1854; Indiana's, between 1851 and 1856; Illinois's, between 1853 and 1857; while extensions were being thrust a third of the way across Iowa, and completely across northern Missouri during 1856 to 1860.<sup>40</sup> By 1853 most farmers east of Illinois, and by 1855 most of those east of the Mississippi River and north of the Ohio were within a comparatively short distance of railroad lines.

Two general sets of influences resulting from the railroads are apparent. On the one hand, the railroads increased the total number of livestock in the Middle West and the profits of the farmers who raised them; and on the other hand, <sup>11/13/2</sup> they made livestock raising relatively less important than grain raising. In the first place the railroads accelerated somewhat the rate of increase of two, and perhaps three, of the four main branches of the livestock industry. The total number of cattle in the Middle Western States increased 27.5 percent between 1840 and 1850, and 61 percent between 1850 and 1860. Swine increased 23.5 percent between 1840 and 1850, and 26.5 percent between 1850 and 1860. Figures on dairying for the 1840 census are not comparable with the next two censuses; but an increase in butter production of 82 percent in the fifties was certainly close to the increase in the forties. Sheep, on the other hand, while increasing 93.2 percent in the forties, increased only 2.5 percent in the next decade under the influence of the railroads. The railroads, by decreasing transportation expenses, also enabled Middle Western

<sup>38</sup> *Ibid.*, 396, 410.

<sup>39</sup> Frederic L. Paxson, "The Railways of the Old Northwest before the Civil War," in the Wisconsin Academy of Sciences, Arts and Letters, *Transactions* (1911-13), 17:252-257.

<sup>40</sup> See the maps in *ibid.* Railroad building had begun in all of these States before the above dates, and went on afterwards, but these dates represent the significant years.

farmers to get a larger share of the total selling price of their stock. Just prior to the railroads, the direct expenses of driving cattle from central Ohio were estimated at between \$10 and \$12 a head, and \$15 from Kentucky. An additional indirect charge of \$10 a head was added for shrinkage in flesh, making the total cost from \$20 to \$25 per head from these States.<sup>41</sup>

The railroad charges for hauling cattle from Ohio and Illinois in 1853 were \$10 and \$15 a head, respectively, with shrinkage in flesh treated as negligible.<sup>42</sup> Thus, costs were cut around 50 percent, while at the same time farmers were better able to judge the probable condition of the cattle market and govern the time of shipment accordingly. Comparable shipping and driving costs are not available for swine. However, study of New York and Cincinnati liveweight prices for the period before and after the advent of the railroads shows that the average difference between these prices, taken quarterly for the period from January 1841, to October 1851, is \$1.568; from January 1852, to October 1860, the average difference is only \$0.980.<sup>43</sup>

It is probable that a much greater proportion of the total number of swine and cattle on farms in the Middle West were being sold off the farms in the fifties because of the railroads. While no complete figures are available, we do have comparatively accurate figures on the number of swine killed and packed commercially in the Middle West after 1842, the number of swine and cattle arriving at the four largest livestock markets of the East, the number of swine taken east by railroads, and fair-to-good estimates of the number of swine driven east and south. Estimates based on such data indicate that in 1842 roughly 9 percent of the total number of swine in the West reached Ohio Valley packing points, or were driven east or south. In 1850,

<sup>41</sup> For Ohio, see the *Cultivator* (n. s.), 8:325 (1851). For Kentucky, see the *Monthly Journal of Agriculture*, 1:584 (1846); 3:154 (1847).

<sup>42</sup> *New York Tribune*, Sept. 13, 1853, p. 8; Oct. 11, 1853, p. 8; Oct. 18, 1853, p. 8.

<sup>43</sup> "Wholesale Prices, Wages and Transportation, 1840-1891," in 52 Congress, 2 session, *Senate Report*, no. 1394, part 2, p. 27-28 (Washington, 1893). Prices were taken at quarterly intervals; and for the 1841-1851 period, comparisons were made for 26 of a possible 44 dates.

approximately 14.5 percent were sold in this way, and 20 percent in 1860.<sup>44</sup>

The New York City cattle market is the only accurate measuring rod which shows the increased number of western cattle being sent to the East. The average number sent annually to

"Figures and estimates used: 1842 swine numbers in west, 9,687,496; swine killed and packed, 657,000; swine driven east, 100,000; swine driven south, 120,000. Total sold 895,000.

1850 swine in west, 11,427,345; swine packed, 1,333,000; swine driven or sent east by railroads, 250,000; swine sent south, 80,000. Total sold 1,663,000.

1860 swine in west, 14,427,316; swine packed, 2,156,000; swine east by railroads, 640,000; swine south by railroads, 100,000. Total sold, 2,896,000.

Sources for figures and estimates: 1842 swine numbers in Middle West estimated as a 20 percent increase of the 1840-1850 increase above 1840 swine numbers. Hog pack of west in packing seasons 1842-43, 1850-51, 1860-61. Philip D. Armour, "The Packing Industry," in Chauncey M. Depew, ed., *One Hundred Years of American Commerce, 1795-1895*, 2:384 (New York, 1895). These figures were carefully collected annually after 1842 by the Cincinnati papers, particularly the *Cincinnati Daily Gazette*, and later the *Cincinnati Price Current*.

Sources for estimates on hogs driven or sent east by railroads. 1842 estimate, 100,000. Basis: 40,000 driven east from Scioto Valley, Ohio, 1838. *Farmer's Register*, 6:305 (1838). Swine received at the Boston, New York, Philadelphia, and Baltimore markets in 1844 (possibly 1843), 103,018. Depew, *American Commerce*, 2:385. 1850 estimate, 250,000. Basis: Hogs received at Baltimore by the Baltimore and Ohio Railroad in 1849, 195,665. *Baltimore American*, Jan. 22, 1850. Part of these were probably from the Shenandoah Valley. Hog-market receipts in 1850 by the Boston, Philadelphia, and Baltimore markets, 210,433. *New York Shipping and Commercial List*, Jan. 8, 1851, Jan. 5, 1853; *Baltimore American*, Jan. 4, 1851. New York hog receipts are not available. 1860 estimate, 640,000. Basis: 640,219 hogs sent east by railroads in the packing season 1858-59. *Cincinnati Price Current*, Mar. 30, 1859. Probably the hogs sent east during the whole year exceeded this appreciably.

Sources for estimates on hogs sent south. 1842 estimate, 120,000. Basis: Hogs through Cumberland Gap, 1842, 54,813. Elizabeth L. Parr, "Kentucky's Overland Trade with the Ante-Bellum South," in the *Historical Quarterly*, 2:77 (January, 1928). This was probably 40 to 50 percent of the total number of hogs sent south from Kentucky. See the *Tennessee Farmer*, 1:110 (1835). 1850 estimate, 80,000. Basis: for driving season of 1850-51, 61,000 hogs through the Cumberland Gap and through Asheville. *Western Journal*, 6:192 (1851). 1860 estimate, 100,000. Basis: 41,215 hogs shipped through Chattanooga on the W. & A. Railroad for Georgia for the fiscal year 1858-59. *Southern Cultivator*, 17:338-339 (1859). Twenty-nine carloads of hogs reached Lynchburg, Va., in two days by the Virginia and Tennessee Railroad, 1,000 of which were taken by Lynchburg. *Cincinnati Daily Gazette*, Dec. 1, 1858. Probably part of these were from Tennessee farmers.

New York during 1848 to 1852 was 80,910; for 1853 to 1859, the period in which the railroads brought most of the cattle, the average annual receipts were 172,630, an increase of 112 percent.<sup>45</sup> In 1859, 67 percent of the total cattle receipts were from Middle Western States, and 27 percent from New York State.<sup>46</sup> As the number of beef cattle in New York decreased 10 percent in the fifties, we are well within the limits of accuracy in presuming that the 112 percent increase came almost altogether from the Western States.<sup>47</sup>

Another view of the agricultural picture of the fifties shows a relatively decreased importance of livestock as compared with grain raising as a direct result of the railroads, and is seen clearly in practically all sections of the West. In the Middle West as a whole, the number of farmers increased 64 percent; wheat production, 122 percent; corn production, 67 percent; beef cattle, 58.5 percent; swine, 26 percent; and sheep only 2½ percent. Butter production with its increase of 82 percent was the only livestock product to increase faster than the number of farmers. However, there were differences in the way this influence worked out in Ohio and Kentucky, and in the States to the westward. In Ohio and Kentucky it did not mean any great increase in the production of either wheat or corn. In fact, wheat production in Ohio, which had been the premier wheat State of the Middle West, remained practically at a standstill in the fifties, due to soil exhaustion and wheat pests and then started downward in the wheat cycle, following New England and New York.<sup>48</sup> Corn production increased only 16.5 percent in these two States, not a great advance in itself. The significant thing is that much more

<sup>45</sup> For 1848-51, see the *New York Shipping and Commercial List*, Jan. 3, 1852; for 1852, Jan. 8, 1853. For 1853-1858, see *Hunt's Merchant's Magazine*, 40:360 (1859). For 1859, the *Country Gentleman*, 15:37 (1860).

<sup>46</sup> *Loc. cit.*

<sup>47</sup> In comparing the number of swine and cattle sold, it is to be noted that the average life of a hog was eighteen months to two years, and that of beef cattle, five to seven years. The 103,824 cattle sent from the West to New York City in 1859 represented the matured cattle of herds totaling over half a million, which in turn were about 10 percent of the total number of Western beef cattle.

<sup>48</sup> John Klippart, *The Wheat Plant*, 321 (Cincinnati, 1860).

of this corn was now sold as a cash crop, and much less of it fed to livestock other than dairy cattle.

The number of swine in Ohio and Kentucky declined 3.6 percent during the fifties. For a time beef cattle seemed to reverse the general trend, as a result of high cattle and beef prices incident to the California gold rush. In Ohio, tax assessors' figures on all cattle indicated an increase of 45 percent<sup>49</sup> between 1851 and 1852. The peak was reached by 1853, and while there was no actual falling off in the total number of cattle after this date, yet, considering the increased attention to dairying, there was probably an actual decrease in beef cattle by 1860. Contemporaries explained the decreased importance of swine and cattle raising in these two States by saying that the price of corn had risen so much, due to the railroads, that farmers could not afford to feed it to their stock.<sup>50</sup>

The number of swine also declined because the railroads had so increased land values as to make it unprofitable to raise them, an explanation not basically different from the first.<sup>51</sup> However, it fits more aptly the 27 percent decline in sheep numbers from 1853 to 1860 after the increase from 1842 to 1853.<sup>52</sup> As one farmer said, wool growing was no longer profitable on a farm costing \$50 an acre.<sup>53</sup> In the late forties and fifties many sheep farmers of Ohio tried to make more intensive use of their higher-priced lands by turning to the coarser-wooled mutton sheep.<sup>54</sup> Despite this attempted metamorphosis, there was a net decline. Dairying, alone of the major livestock industries of the West, was relatively favored by improved transportation; Ohio butter production increased 41 percent during the fifties.

West of Ohio and Kentucky both grain production and livestock showed large gains in the fifties, but especially the former.

<sup>49</sup> *Southern Planter*, 17:354 (June, 1857), from the *Ohio Cultivator*.

<sup>50</sup> For swine, see the Ohio State Board of Agriculture, *Annual Report* (1850) 5:301; Cincinnati Chamber of Commerce, *Annual Report*, 1849-50, 3. For beef cattle, see the Ohio State Board of Agriculture, *Annual Report* (1857), 12:310.

<sup>51</sup> *Cincinnati Daily Gazette*, Oct. 13, 1852, p. 2.

<sup>52</sup> Wright, *Wool Growing*, 147. This is based on tax assessor's figures.

<sup>53</sup> Ohio State Board of Agriculture, *Annual Report* (1859), 14:582.

<sup>54</sup> *Ibid.*, *Annual Report* (1849), 4:106; *Annual Report* (1853), 8:586, 604, 643, 649.



The number of farmers in these new States increased 82 percent, while wheat production increased 161 percent, and corn 99 percent. But beef cattle numbers increased only 65 percent, swine, 46 percent, and sheep, 23 percent.<sup>55</sup> Thus wheat and corn production increased much faster than the number of farmers; but livestock numbers were well under the latter percentage.

The special conditions in these States, particularly in the Prairie States, largely explain why grain raising forged ahead of livestock. To the emigrant of small means, cattle were too expensive to buy. Paradoxically, the same high prices that might be obtained for the fattened cattle were an obstacle to the farmer in building up his initial herd. (As one Wisconsin farmer put it, "in answer to the inquiry, why do you not raise stock, the answer is, we have no money to begin upon."<sup>56</sup>)

Swine, the poor man's livestock, were handicapped in the first few years of prairie settlement. The prairies lacked mast, on which the woodland frontier swine had fared so well, and wheat farmers of Illinois and Iowa secured a law prohibiting swine running at large on account of danger to newly erected fences.<sup>57</sup> Sheep, it is true, were imported in large numbers to the frontier West in the early fifties, but the movement soon stopped. The railroads made it uneconomical to use good corn or wheat land for sheep raising; while the prairie farmer was not always willing to give to sheep the attention that they required.<sup>58</sup>

Thus, the small farmer on the prairie frontier found many difficulties and much expense in turning to livestock; while there was little of either in raising corn and wheat, and the railroads

<sup>55</sup> Indiana was about halfway between Ohio and Kentucky and the newer frontier of the West. Her farmers increased 22 percent, wheat production, 171 percent, corn, 35 percent, beef cattle, 64 percent, swine numbers, 37 percent, and a 13 percent decline in sheep numbers. All of her livestock except sheep increased faster than the number of farmers, a fact which differentiated the State from others of the Middle West.

<sup>56</sup> Wisconsin Agricultural Society, *Transactions* (1852), 2:107. See *ibid.*, 1:163 (1851); *Prairie Farmer*, 10:299 (1850).

<sup>57</sup> Frederick Gerhard, *Illinois As It Is*, 368 (Chicago, 1857). Iowa State Agricultural Society, *Annual Report* (1857) 4:198-199.

<sup>58</sup> Wright, *Wool Growing*, 146-151.

furnished the necessary outlet for the latter. There were indications during the last few years before 1860 that wheat supremacy was to be short-lived, and that the combination of corn, swine, and beef cattle would again dominate in the present Corn Belt. The loose, loamy soil, the open winters, the hot and humid early summers, made winter-wheat raising uncertain on the Illinois prairies during the late fifties, and it had already started to retreat southward to the clay, woodland soils along the Ohio River before 1860.<sup>59</sup>

In summary, we may say that the use of steamboats on western waters was mainly instrumental in permitting a more profitable expansion of swine raising in the Middle West. The building of the Erie and Ohio canals was probably a necessary prelude to the rapid expansion of sheep raising and dairying in Ohio in the forties. With the exception of sheep raising, the building of railroads aided in increasing the total number of livestock, added to its greater profitableness, and tended to subordinate livestock raising to grain production during the fifties.

*Cedar Falls, Iowa.*

<sup>59</sup> Russell Anderson, "Agriculture in Illinois during the Civil War Period, 1850-1870," 182-184 (Mss. Ph.D. Thesis, University of Illinois).

## NEWS NOTES AND COMMENTS

### DECEMBER MEETING OF THE AGRICULTURAL HISTORY SOCIETY

The Agricultural History Society met currently with the American Historical Association and other historical societies at Urbana, Illinois, on December 27, 28, and 29, 1933. About sixty were present at the luncheon of the Agricultural History Society on December 28 when Professor H. C. Nixon of Tulane University spoke on "The South in Our Times." Professor L. B. Schmidt, the Society's president, presided. The joint session of the Agricultural History Society and the American Historical Association on Friday afternoon, December 29, was devoted to "Agriculture in the Middle West." The following are the titles of the papers which were presented: The Influence of Transportation Changes on the Development of the Livestock Industry of the Middle West to 1860, by Dr. Charles T. Leavitt of Cedar Falls, Iowa; The Reaper Industry as Related to the Agricultural Development of the Middle West from 1855 to 1875, by Professor William T. Hutchinson of the University of Chicago; Pools and Associations on the Western Cattle Ranges, by Professor Louis Pelzer of the State University of Iowa; and The Reputation of Middle Western American Agriculture in England, 1850-1870, by Professor Harry J. Carman of Columbia University. Professor L. B. Schmidt acted as chairman of the joint session, and Professor E. E. Dale of the University of Oklahoma commented on the papers. About eighty were in attendance.

### DR. A. C. TRUE'S HISTORY OF AGRICULTURAL RESEARCH

It is probably known to but few readers of *Agricultural History* that, in addition to the two monographs, *A History of Agricultural Education in the United States* (Washington, 1929) and *A History of Agricultural Extension Work in the United States* (Washington, 1928), published by the U. S. Department of



Agriculture, the late Dr. A. C. True, for many years Director of the Office of Experiment Stations, had practically completed, at the time of his death in 1929, a third monograph dealing exhaustively with the history of agricultural research in the United States from 1620 to 1925, and covering both the work of the Department and that of the State experiment stations. Unfortunately this monograph, which is probably the most complete, accurate, and orderly compilation and critical review of source material and bibliographical data relating to the development of agricultural research in this country, has not been printed and is available for consultation only in typewritten form in the Library and the Office of Experiment Stations of the Department of Agriculture.—*Walter H. Beal.*

#### CHARLES READ'S NOTES ON COLONIAL AGRICULTURE

About five years ago Mr. Charles A. Thompson, county agricultural agent in Burlington County, New Jersey, came across a very interesting manuscript consisting of a quarto volume of John Worlidge's *Systema Agriculturae; The Mystery of Husbandry Discovered* (3d ed. London, 1681), voluminously annotated on interleaves and margins. The notes consist of a wide range of comment on various phases of agriculture such as care and management of the soil, field crops, fruits, vegetables, care and management of livestock, control of animal diseases, insect pests, farm structures and equipment, and cooking and medicinal recipes. The notes were drawn from various works on agriculture, approximately thirty-five published works being mentioned, including Jared Eliot's *Essays on Field Husbandry* and many volumes by English authors. The author's own experiences are given in detail and also those of more than one hundred others, obtained by observation, conversation, and correspondence.

The author of this conspicuously unique desiderata of data on American colonial agriculture has been identified as Charles Read, one of the largest land owners in New Jersey, secretary of the Province, a member of its legislature and of its supreme court,

and a pioneer in the development of the iron industry in southern New Jersey.

Dr. Carl R. Woodward, assistant to the president at Rutgers University and noted agricultural historian, is editing the material in these notes for publication. The material will be arranged logically by topics and preceded by a comprehensive biographical sketch of Charles Read.

#### WALTER OF HENLEY'S TREATISE ON HUSBANDRY

"Missing medieval links in the records of British agricultural development are expected to be revealed as a result of a recent literary find. A fourteenth century manuscript in Walter of Henley's treatise on 'Husbandry' was discovered on the flyleaves of a rental of priory in Hampshire. It is hoped that this discovery will enable the true text of Walter of Henley's book to be ascertained. Most of the existing codices are littered with interpolations. The treatise was in general use as a practical guide to agriculture from the reign of Henry III to that of Henry VIII. In this period agriculture underwent many changes, and the owners of the various extant copies of 'Husbandry' kept on amending them so as to bring them abreast of the times. The present interpolated manuscript is therefore held to be of great value as restoring the original thirteenth century text. The treatise has been exhibited at a meeting of the Royal Historical Society. It is thought that in conjunction with three other works, one by Robert Grosseteste, Bishop of Lincoln, and the other two anonymous, it will furnish the basis for inquiry into the subject of medieval agriculture in Great Britain."—*Publisher's Weekly*, 124:1883 (Nov. 25, 1933). Also quoted in *Agricultural Library Notes*, 8:181 (December, 1933).

#### ACTIVITIES OF MEMBERS

Dr. O. E. Baker's presidential address before the Association of American Geographers appears with the title, "Rural-Urban Migration and the National Welfare," in the Association's *Annals*, 23:59-126 (June, 1933).

Dr. Carleton R. Ball of the Bureau of Public Administration of the University of California is investigating the development of coöperative relations between official agencies in agriculture, Federal, State, county, and municipal, in the United States.

Professor Herbert E. Bolton and Professor C. O. Sauer of the University of California are making a study of the agricultural exploitation by the missionaries in Mexico, Baja California, and Alta California.

Mr. Lyman Carrier of Coquille, Oregon, a founder and life member of the Agricultural History Society, visited friends in Washington, D. C., during the holiday season.

Professor Avery Craven of the University of Chicago is editing Professor Frederick J. Turner's manuscript, "The United States, 1830-1850: The Nation and Its Sections," for publication.

Professor Robert Samuel Fletcher of Oberlin College is preparing a history of Oberlin College. His article on "The Government of the Oberlin Colony" appeared in the *Mississippi Valley Historical Review*, 20:179-190 (September, 1933).

Professor W. Freeman Galpin of Syracuse University is the author of *Pioneering for Peace*, sponsored by the School of Citizenship and Public Affairs of Syracuse University, Syracuse, N. Y. The volume is an intensive and exhaustive analysis of the genesis and growth of peace efforts within the United States down to the outbreak of the Mexican War.

Mr. Herbert A. Kellar's arrangement of models showing the evolution of grain-cutting machines as part of the International Harvester Company's display in the Agricultural Building of the Century of Progress was among the outstanding exhibits at the Chicago fair. Mr. Kellar has completed the collection of the letters and other writings of Solon Robinson, widely known contributor to various farm periodicals and agricultural editor of Horace Greeley's New York *Tribune*.

Mr. Rodney C. Loehr, a graduate student of the University of Minnesota, is making a study of Arthur Young and English Agriculture.

Professor James C. Malin has completed his manuscript on the history of agricultural policies in the United States.

Mrs. Lois B. Payson has resigned her position in the library of the U. S. Department of Agriculture to become librarian of Montana State Agricultural College at Bozeman.

Professor Eugene H. Roseboom of Ohio State University is engaged in a study of Ohio history during 1840-1860, including changes in the State's agriculture.

Professor Earle D. Ross of Iowa State College is making a study of the origins and development of the land-grant agricultural colleges to 1890.

Mr. Knowles A. Ryerson whose address on "History and Significance of the Foreign Plant Introduction Work of the United States Department of Agriculture" appeared in *Agricultural History*, 7:110-128 (July, 1933) has been appointed chief of the Bureau of Plant Industry.

Professor S. W. Shear of the University of California College of Agriculture is compiling data on United States production and consumption of wine for a long series of years for use in a study of the California wine and wine-grape industry in pre-prohibition days.

Dr. O. C. Stine, in charge of the Division of Statistical and Historical Research of the U. S. Bureau of Agricultural Economics and secretary-treasurer of the Agricultural History Society, has been designated a member of the Central Statistical Board, created by the Executive Order of President Roosevelt on July 27, 1933. The Board is empowered to "Appraise and advise upon all schedules of all Government agencies engaged in the primary collection of statistics required in carrying out the purposes of the National Industrial Act, to review plans for tabulation and classification of such statistics, and to promote the coördination and improvement of the statistical services involved."

Dr. William A. Taylor, chief of the Bureau of Plant Industry, retired on December 30, 1933, after more than forty-two years with the U. S. Department of Agriculture. Serving under ten Secretaries of Agriculture, his record coincides with that of the Department's largest experimental bureau. Dr. Taylor is a charter member of the Agricultural History Society and has always had an active interest in its work. The Society's mem-

bership joins with Secretary Henry A. Wallace in saying, "Few men in the field of science have gained—or deserved—greater world-wide respect. . . May the future provide you with a share of the happiness your labors have brought to others."

Mr. H. R. Tolley of the Giannini Foundation of the University of California has been appointed chief economist of the Agricultural Adjustment Administration.

Professor Rodney H. True, director of the Morris Arboretum of the University of Pennsylvania, is preparing a history of the Philadelphia Society for the Promoting of Agriculture for the one hundred and fiftieth anniversary of its founding in 1935.

Professor Jonas Viles of the University of Missouri, as president of the Mississippi Valley Historical Association, extends a cordial invitation to all members of the various historical societies to attend the Association's annual meeting at Columbia, Missouri, in April, 1934.

Professor George S. Wehrwein reports that the Department of Agricultural Economics of the University of Wisconsin College of Agriculture has undertaken a historical research project dealing with abandoned farm lands in central Wisconsin. Special attention has been given to one township to ascertain the factors causing farm abandonment since the Civil War.

Dr. M. L. Wilson, as director of the Subsistence Homesteads Division of the U. S. Department of Interior, has charge of the Government's experiments in the "back to the land" movement.

#### BOOKS

Ernest Brehaut's translation of and illuminating introduction to Cato's *De agricultura* has been issued by the Columbia University Press with the title, *Cato the Censor on Farming*.

Ulysses Prentiss Hedrick's *A History of Agriculture in the State of New York* ([Albany, N. Y.] N. Y. State Agr. Soc., 1933. 462 p.), for sale by the N. Y. Agr. Expt. Sta., Geneva, N. Y., is reviewed by Caroline B. Sherman in *Agr. Econ. Lit.*, 8:10-12 (January, 1934).

Isaac Lippincott's *Economic Development of the United States* (New York, D. Appleton & Co., 1933. 734 p.), 3d edition, is reviewed by Roy M. Robbins in *Miss. Valley Hist. Rev.*, 20:449 (December, 1933).

H. H. McCarty and C. Woody Thompson, *Meat Packing in Iowa* (Iowa City, State Univ. Iowa, 1933. 138 p., illus.), issued as *Iowa Studies in Business No. 12*,

has chapters on the pioneer period, the rise of the interior packing centers, Sioux City, the boom period, and present-day meat packing operations.

Roscoe C. Martin's *The People's Party in Texas: A Study in Third Party Politics* (Austin, Univ. Texas, 1933. 280 p., bibliog.) is issued as Univ. Texas Bul. 3308 and as Bur. Research in the Social Sci., Study 4. It is reviewed by Elmer Ellis in the *Miss. Valley Hist. Rev.* 20:429-430 (December, 1933).

A. M. Sakolski's *The Great American Land Bubble; the Amazing Story of Land-grabbing, Speculations, and Booms from Colonial Days to the Present Time* (New York, Harper & Bros., 1932. 373 p., illus.) is reviewed by George Stephenson in the *N. Dak. Hist. Quart.*, 7:175-176 (January-April, 1933); by R. M. R[obbins] in the *Miss. Valley Hist. Rev.*, 19:612-613 (March, 1933); by Everett E. Edwards in *Agr. Econ. Lit.*, 7:249-250 (May, 1933); and by Alice Felt Tyler in *Minn. Hist.*, 14:197-200 (June, 1933).

Ellen Churchill Semple's *American History and Its Geographic Conditions* (Boston, Houghton Mifflin Co., 1933. 541 p.), a revised edition in collaboration with Clarence Fielden Jones, is reviewed by Charles E. Martz in the *Miss. Valley Hist. Rev.*, 20:449-450 (December, 1933).

#### ARTICLES ON AMERICAN AGRICULTURE

Among the recent articles of interest to readers of AGRICULTURAL HISTORY are the following: Glen A. Black, "Prehistoric American Diet," *Ind. Mag. Hist.*, 29:96-103 (June, 1933); C. R. Daugherty, "Horsepower Equipment in the United States, 1869-1929," *Amer. Econ. Rev.*, 23:428-440 (September, 1933); John Lacey, "A Century of Farm Progress," *Prairie Farmer*, 105 (16):7, 24 (Aug. 5, 1933); Henry S. Graves, "A National Plan for American Forestry," *Geogr. Rev.*, 24:129-133 (January, 1934); B[ertha] L. H[eilbron], "The American Turf Register and Sporting Magazine," *Minn. Hist.*, 14:421-424 (December, 1933); Jeannette P. Nichols, "Silver Inflation and the Senate in 1933," *Social Studies*, 25:12-18 (January, 1934); Allen Walker Read, "The Comment of British Travelers on Early American Terms Relating to Agriculture," *Agr. Hist.*, 7:99-109 (July, 1933); Knowles A. Ryerson, "History and Significance of the Foreign Plant Introduction Work of the United States Department of Agriculture," *ibid.*, 7:110-128 (July, 1933).

California: Robert W. Hodgson, "The California Fruit Industry," *Econ. Geogr.*, 9:337-355, illus. (October, 1933); Clifford M. Zierer, "The Citrus Fruit Industry of the Los Angeles Basin," *ibid.*, 10:53-73, illus. (January, 1934); Harry S. Smith, and others, "The Efficacy and Economic Effects of Plant Quarantines in California," *Calif. Agr. Expt. Sta., Berkeley, Bul. 553*, 276 p. (July, 1933), including a brief history of plant quarantine in California, p. 109-114; Erich Kraemer and H. E. Erdman, "History of Coöperation in the Marketing of California Fresh Deciduous Fruits," *ibid.*, *Bul. 557*, 121 p. (September, 1933); E. D. Tetreau, "The Objectives and Activities of the California Farm Bureau," *ibid.*, *Bul. 563*, 89 p. (November, 1933).

Colorado: S. D. Mock, "Effects of the 'Boom' Decade, 1870-1880, upon Colorado Population," *Colo. Mag.*, 11:27-34, maps (January, 1934).

Iowa: Ruth A. Gallaher, "Money in Pioneer Iowa, 1838-1865," *Ia. Jour. Hist. and Politics*, 32:3-59 (January, 1934).



Kansas: Russell Hickman, "The Vegetarian and Octagon Settlement Companies," *Kans. Hist. Quart.*, 2:377-385 (November, 1933).

Kentucky: J. Sullivan Gibson, "Land Economy of Warren County, Kentucky," *Econ. Geogr.*, 10:74-98, maps (January, 1934).

Maine: Margaret H. Jewell, "Country Life in Maine a Century Ago," *Old-Time New England*, 23:28-38 (July, 1932); Richard G. Wood, "A Bibliography of Travel in Maine, 1783-1861," *New England Quart.*, 6:426-439 (June, 1933).

Massachusetts: Carl Bridenbaugh, "The High Cost of Living in Boston, 1728," resulting from the impaired purchasing power of paper currency, *New England Quart.*, 5:800-811 (October, 1932).

Minnesota: Evadene A. Burris, "Frontier Food [in Minnesota]," *Minn. Hist.*, 14:378-392, illus. (December, 1933), based on a chapter in a master's thesis (University of Minnesota, 1933) on "Frontier Homes and Home Management." Many articles in the *Minnesota Diamond Jubilee History* issue of the *St. Paul Sunday Pioneer Press*, Dec. 31, 1933.

New England: H. C. Woodworth, "Readjustments in Farm Organization in New England," *Jour. Farm Econ.*, 14:447-452 (July, 1932).

New York: Helen Wilkinson Reynolds, ed., "Farm-life in the Hudson Valley, 1769-1779," Dutchess Co. Hist. Soc. *Year Book* (1933) 18:41-53, excerpts from St. John de Crèvecoeur's *Sketches of Eighteenth Century America, More Letters of an American Farmer*, edited by Henri L. Bourdin, Ralph H. Gabriel, and Stanley T. Williams (New Haven, Yale Univ. Press, 1925); James E. Rice, "Recollections," concerning the New York State College of Agriculture, *Cornell Countryman*, 30:97-98, 103, 110 (October, 1933).

North Dakota: Bertha L. Heilbron, ed., "A British Agricultural Expert in the Red River Valley, 1879," *N. Dak. Hist. Quart.* (April, 1933), a reprint of a chapter from Finlay Dun's *American Farming and Food* (London, 1881).

Pennsylvania: Alfred P. James, ed., "The Early Property and Land Title Situation in Western Pennsylvania," a memorial to General Gage by one John Metcalfe, *West. Pa. Hist. Mag.*, 16:197-204 (August, 1933).

South Carolina: Rosser H. Taylor, "Hamburg: An Experiment in Town Promotion," *N. C. Hist. Rev.*, 11:20-38 (January, 1934).

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